

Lubricants and operating fluids from Liebherr



LIEBHERR

Liebherr lubricants and operating fluids

Today, lubricants are to be considered design elements. Due to the rapid development in component and control system technology, lubricants have to deliver ever better performance and longer service life and must function flawlessly even under the hardest conditions of use.

Liebherr offers you an extensive range of high-quality lubricants and operating fluids which are specially designed to meet the requirements of Liebherr machines. This ensures trouble-free operation, optimized work processes and high machine availability as well as a minimum of wear and tear.

In environmentally sensitive areas, the Liebherr Hydraulic Plus and Liebherr Hydraulic Plus Arctic may be used, two hydraulic oils based on polyalphaolefines (PAO). They are bio-degradable (Biodegradation (21 days, so-called primary degradation*) according to CEC-L-103-12 $\geq 60\%$) and have excellent low-friction properties. Liebherr offers all lubricants and operating fluids from one source.



* The test method considers directly the disappearance of the oil up to the degradation level of water solubility.

Quality and reliability

Liebherr continuously invests in the research and development of products designed specifically to meet the requirements of Liebherr machines thus ensuring that the growing demands made on lubricants will continue to be met also in future. These lubricants comply with all requirements on operational reliability and meet the highest Liebherr quality standards.

Liebherr lubricants thus enable trouble-free machine performance, short machine response times, good cold start properties and a reduced warm-up phase. This also includes a highly precise and sensitive controllability of the machine.

Liebherr lubricants have a long service life and offer the best possible protection from corrosion and wear for all components.

Benefit from our long-standing experience and technical knowhow and use the original products from Liebherr! Only then will you be certain that all components and lubricants are perfectly matched for your machine to achieve the maximum performance.

Cost-effectiveness

Liebherr lubricants have been developed to exactly meet the requirements of Liebherr machines and therefore contribute significantly to lower operating and service costs. As a system supplier Liebherr supports you in reducing the number of required lubricants per machine to a minimum, enabling you to save money and storage space.



The Liebherr Lubricants Service

Expert advice and competent service

With Liebherr lubricants you are on the safe side. We assist you in all questions regarding the use of lubricants and operating fluids and will, together with you, find the optimum product for your individual requirements. We inform you about the individual characteristics of each lubricant, its correct and safe application, storage and disposal as well as about any applicable standards and directives. We will also be happy to assist you in preparing your lube charts.

The same high quality of Liebherr lubricants is available world-wide. A well-planned logistics system allows a fast delivery of lubricants to any destination at any time.

Profit from our long-standing experience and the high-quality Liebherr lubricants and operating fluids developed to the latest research results! Make use of the all-in lubricants service at your Liebherr Service partner!



To preserve the quality and service life of an oil as long as possible and to ensure its efficient use, three factors are crucial: The selection of the correct filter, a minimum degree of contamination of the oil with foreign substances and careful handling.

Original filters from Liebherr

The quality of the oil is crucial for the total life of the engine, transmission and complex hydraulic systems. Long-standing experience from the use of construction machines shows that the major part of component failures as well as early wear are caused by contamination of the hydraulic system with solid particles. Badly filtered oil or insufficient lubrication may cause serious and expensive damage to your engine!

Therefore, Liebherr uses only high-quality original filters in all of its machines. This is the only way to keep the risk of expensive damage to components and machine failures to a minimum.

The difference between an original Liebherr filter and a counterfeit filter is often hard to see from the outside. Often, the dirt-holding capacity of the counterfeit filter is distinctly inferior or it shows leakage because the seals and gaskets do not exactly match the system. An inferior pressure stability may also cause the filter to burst. Therefore, use only original filters from Liebherr and rely on our knowhow and our service!

Careful handling and cleanliness

Oils and greases can guarantee a trouble-free operation only if they are handled properly. Contamination leads to higher wear, erosion, corrosion or malfunction.

A clean work area and the use of clean work equipment are essential prerequisites. When opening lubricant containers, always make sure that no dust or any other foreign substances on the lid can contaminate the product. Always close the lid immediately after you are done. The area around the filler neck should be kept meticulously clean. Always top up your hydraulic system via the return flow filter.



Oil change

Oil change according to work load with the Liebherr oil analysis

Special oil analysis sets allow a scientifically based and fast determination of the optimum time for an oil change. This not only saves money but is also beneficial for the environment by producing less used oil which needs to be disposed of. For an analysis of the oil condition in your machine, Liebherr recommends the OELCHECK Used Oil Analysis.

Continuous monitoring of the oil condition gives you better control over the condition of the hydraulic system as well as the operating fluids, enabling you to see when there is need for action and avoiding undesirable consequential failures.

The benefits of the Liebherr oil analysis at one glance

- Scientifically based examination of the oil condition including a detailed diagnosis report
- Knowledge of the actual condition of your machine - without requiring time-consuming disassembly work
- Longer oil change intervals and oil change at the ideal time
- Detection of impending damage at an early stage, thus avoiding expensive repairs and downtimes
- Long service life of hydraulic and drive components
- Reduction of your operating and maintenance costs
- Environmentally beneficial due to less used oil waste

Order information

Ident number

Mineral oil analysis set

Single analysis set	81 45 660
Analysis set, 4-fold	10 02 96 26
Analysis set, 6-fold	70 18 368
Analysis set, 12-fold	70 18 369

Bio-degradable oils analysis set

Single analysis set	70 26 817
Analysis set, 6-fold	70 26 088

Bleeder valve

70 19 068

For more information please contact your Liebherr Service Partner.

Ready-to-use analysis sets and online lab reports

The OELCHECK analysis sets make sample-taking quick, clean and easy. The price of the set includes the costs of a complete analysis. For samples that arrive at the OELCHECK lab complete with all necessary information before 12 o'clock noon, you will receive the lab reports by e-mail, mail or fax not later than the following day, including easy-to-understand comments. All results, including those of earlier analyses, are compiled in your personal online database. Go to www.laborberichte.com to get your personal access code for the online database OELCHECK.





Diesel engines are developed and built by Liebherr especially for use in heavy-duty construction machines and are therefore exceptionally powerful and robust. The Liebherr Diesel motor oil will preserve these properties as long as possible, as it extends the service life of the machine components.

Liebherr Motoroil 10W-40 low ash

Viscosity SAE 10W-40

Application*



- Application temperature
-20 to +45°C outside temperature
- Released for use in all Liebherr Diesel engines
- Low-ash oil for Diesel engine technology with exhaust gas treatment
- Mandatory for use with particle filters in Diesel engines
- Long oil change intervals of up to 500 op hrs for Diesel engines in Liebherr machines
- Low-friction oil for a better start behaviour at low temperatures
- High wear and corrosion protection as well as ageing stability
- Minimization of fuel consumption and exhaust emission
- High safety reserve towards deposits in the engine

Liebherr Motoroil 10W-40

Viscosity SAE 10W-40

Application*



- Application temperature
-20°C to +45°C outside temperature
- Long oil change intervals of up to 500 op hrs for Diesel engines in Liebherr machines
- Low-friction oil for a better start behaviour at low temperatures
- High wear and corrosion protection as well as ageing stability
- Minimization of fuel consumption and exhaust emission
- High safety reserve towards deposits in the engine

Liebherr Motoroil 5W-30 low ash

Viscosity SAE 5W-30

Application*



- Application temperature
-30 to +30°C outside temperature
- Low-friction oil with excellent properties for use in Liebherr machines at low temperatures
- Low-ash oil for Diesel engine technology with exhaust treatment
- Mandatory for use with particle filters in Diesel engines at low ambient temperatures
- Long oil change intervals of up to 500 op hrs for Diesel engines in Liebherr machines
- High wear and corrosion protection as well as ageing stability
- Optimisation of cold start behaviour and fuel consumption
- High safety reserve towards deposits in the engine

Liebherr Motoroil 5W-30

Viscosity SAE 5W-30

Application*



- Application temperature
-30 to +30°C outside temperature
- Low-friction oil with excellent properties for use in Liebherr machines at low temperatures
- Long oil change intervals of up to 500 op hrs for Diesel engines in Liebherr machines
- High wear and corrosion protection as well as ageing stability
- Optimisation of cold start behaviour and fuel consumption
- High safety reserve towards deposits in the engine

* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.

Hydraulic Oil



广州孚润 400-992-6811

Hydraulic systems today are expected to provide high-precision control and optimum efficiency, even under extreme conditions. Liebherr hydraulic oils were especially developed to meet these requirements and contribute significantly to prolonging the life of your construction machine as well as its performance and efficiency. Liebherr hydraulic oils are characterized by high thermal resistance and good elastomer compatibility, corrosion protection and minimization of wear. They also allow long oil change intervals and reduce slip start and rebounding of the hydraulic system. Hydraulic oils from Liebherr therefore meet the high demands of all renowned manufacturers of hydraulic components.

Liebherr Hydraulic Basic 68

Viscosity ISO VG 68

Application*



- Application temperature: -10°C (cold start) to +45°C outside temperature
- Liebherr standard oil for Liebherr wheel loaders, crawler tractors and crawler loaders as well as telescopic handlers
- Very good corrosion protection
- Good elastomer compatibility
- Excellent detergent and dispersant abilities

Liebherr Hydraulic HVI

Viscosity ISO VG 46 (32-68)

Application*



- Application temperature: -20°C (cold start) to +40°C outside temperature
- Liebherr standard oil for Liebherr wheeled excavators and crawler excavators
- High-quality multi-grade hydraulic oil
- Optimized fine control with reduced warm-up phase
- Especially suitable for use in low temperatures
- Increased ageing stability, therefore longer service intervals and lower maintenance costs

Liebherr Hydraulic 37

Viscosity VG 32-46

Application*



- Application temperature: -25°C (cold start) to +50°C outside temperature
- High-quality multi-grade hydraulic oil, especially for use in Liebherr cranes
- Significantly improved fine control with reduced warm-up phase

Liebherr Hydraulic Basic 100

Viscosity ISO VG 100

Application*



- Application temperature: 0°C (cold start) to +55°C outside temperature
- Liebherr hydraulic oil for hot climates
- Very good corrosion protection
- Good elastomer compatibility
- Excellent detergent and dispersant abilities

Liebherr Hydraulic FFE 30

Viscosity VG 15-46

Application*



- Application temperature: -40°C (cold start) to +50°C outside temperature
- Ash-free high-performance hydraulic oil on the basis of high-quality hydrocarbons, especially for use in Liebherr cranes
- Excellent ageing stability with optimized detergent and dispersant properties
- Higher machine availability with reduced warm-up phase
- Longer oil change intervals

* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.



Environmentally friendly hydraulic oil

The two high-performance oils Liebherr Hydraulic Plus and Liebherr Hydraulic Plus Arctic from the group of the HEPR oils, on the basis of polyalphaolefines (PAO) are bio-degradable (Biodegradation (21 days, so-called primary degradation*) according to CEC-L-103-12 $\geq 60\%$) and are suitable for applications in environmentally sensitive areas.

Liebherr Hydraulic Plus

Viscosity ISO VG 46 (32-68)

Application**



- Application temperature:
-25°C (cold start) to +45°C outside temperature
- High-performance hydraulic fluid with significantly extended change intervals provided the oil is properly taken care of and monitored by means of the Liebherr oil analysis
- Excellent behaviour in high and low temperatures, therefore better cold start properties; significantly reduced warm-up phase
- Optimised filterability
- Bio-degradable (Biodegradation (21 days, so-called primary degradation*) according to CEC-L-103-12 $\geq 60\%$) for applications in environmentally sensitive areas
- Low air absorption, good air release properties, low foaming
- Compatible with elastomers and hoses, comparable to mineral oils
- Hydrolysis stability similar to mineral oils
- No technical problems to be expected if inadvertently mixed with other Liebherr hydraulic oils (Observe legal limit values for foreign oils if used in bio applications!)

Liebherr Hydraulic Plus Arctic

Viscosity VG 15-46

Application**



Same properties as Liebherr Hydraulic Plus, except:

- Application temperature:
generally -40°C (cold start) to +30°C; for more recommendations see operating instructions

* The test method considers directly the disappearance of the oil up to the degradation level of water solubility.

** Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.

Axle and transmission oils



Axle and transmission oils from Liebherr were especially developed for components where high friction values and shearing forces occur. The use of high-grade basic oils and matched additives creates an optimum friction and wear behaviour ensuring a long service life of the components even under demanding application conditions.

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Liebherr Gear Basic 90LS

Viscosity SAE 85W-90

Application*



- Application temperature:
To -30° outside temperature
To -5°C with splitter boxes with oil cooler
- Developed for axle transmissions with limited slip differentials in Liebherr construction machines, log and material handling excavators
- Limited slip additives (LS additives)
- Wear and corrosion protection, specially optimized for Liebherr machines
- Good ageing stability
- Continuous high performance

Liebherr Gear Plus 20W-40

Viscosity SAE 20W-40

Application*



- High-performance oil, especially developed for use in axles of Liebherr road rail excavators and log handling machines
- UTTO high-pressure lube oil for heavy-duty axles in Liebherr machines
- Limited slip additives (LS additives)
- Reduced friction loss due to high lubricity

Liebherr Syntogear Plus 75W-90

Viscosity SAE 75W-90

Application*



- Fully synthetic transmission oil with excellent ageing stability
- Developed for use in transmissions and manual gearboxes of Liebherr machines as well as final drives of crawler tractors PR 714, especially also in low temperature applications
- Reduced fuel consumption
- Long oil change intervals

Liebherr Hydraulic-Gear ATF

Viscosity SAE 5W-20

Application*



- Application temperature:
-40°C to +50°C outside temperature for automatic gearboxes and -25°C to +50°C outside temperature for crane hydraulics
- Excellent corrosion protection
- Reduces wear and friction
- Increases service life of components
- Special-alloy power transmission oil for automatic gearboxes and special hydraulics in cranes. Especially suitable for transmissions of Liebherr "2plus2" wheel loaders

Liebherr Gear Hypoid 90EP

Viscosity SAE 85W-90EP

Application*



- High-pressure transmission oil for axle transmissions (with EP additives)
- Formation of a stable lubricating film
- Increases service life of components
- Especially for use in splitter boxes, winch and slewing gear drives according to regulations
- Excellent corrosion protection
- Good ageing stability

Liebherr Hypoid 85W-140EP

Viscosity SAE 85W-140

Application*



- Especially developed for final drives of Liebherr crawler tractors and crawler loaders (except PR 714)
- High-pressure transmission oil (with EP additives)
- Formation of a stable lubricating film
- Increases service life of components

* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.



Greases

Careful lubrication with high-quality greases is of special importance in order to ensure the reliability and performance of heavy-duty machines.

Liebherr Universalfett 9900

Labelling KPF 2 N-25

Universal Grease 9900

Application*



- Operating temperature: -25°C to +150°C; in central lubricating systems to -20°C, short-term permissible temperature peak: +200°C
- Can be pumped or fed in central lubrication systems to -20°C
- Suitable for the lubrication of slewing rings, roller bearings, pins, gear rings, axles, screws and many more
- Very strong adhesion properties, squeeze stable, non-ageing, water-resistant
- Highly effective special corrosion protection
- Reduced model variety lessens risk of mix-up, facilitates ordering and takes up less storage space

Liebherr Teleskopfett 9613 Plus

Labelling KP 2 K-30 Telescope Grease 9613 Plus

Application*



- Operating temperature: -30°C to +120°C; feedable in central lubricating systems to -30°C
- Special jib grease for telescope applications in Liebherr machines
- Anti-stick-slip properties to prevent stick-slip motions, also in wet conditions
- Very small friction coefficient
- High adhesion properties on plastic materials
- Low static friction during start-up

Liebherr Universalfett Arctic

Labelling KPFHC 1 N-60

Universal Grease Arctic

Application*



- Operating temperature: -60°C to +140°C; feedable in central lubricating systems to -55°C
- Can be pumped or fed in central lubrication systems to -55°C
- Lubrication of slewing bearings, pins, gear rings, axles, screws and many more
- Very strong adhesion properties, squeeze stable, non-ageing, water-resistant

Liebherr Sprühpaste/Spray paste

Labelling MPF 00 G-40

Application*



- Operating temperature: -25°C to +100°C, short-term up to +120°C
- Sprayable, cold-flexible paste with micro graphite for the low-wear operation of meshing tooth flanks
- Increased corrosion protection
- Emergency-running properties
- Water-resistant
- High-pressure additives and adhesives
- Good film-retaining property

* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.

Special lubricants



Liebherr offers special lubricants for special applications such as the lubrication of screws or plug tools and wear bushings in hydraulic and pneumatic hammers, which are designed to exactly meet these requirements.

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Liebherr Meißelpaste

Labelling MF 2-3 P-20

chisel paste



Application*



- Operating temperature:
-20°C to +150°C during permanent lubrication
(Separating effect of solid substance film to approx. +800°C)
- Paste enriched with metallic powder and solid substances for the lubrication of plug tools and wear bushings in hydraulic and pneumatic hammers
- This is not a lube grease! Do not use it for the lubrication of rolling or sliding bearings!
- Very squeeze stable, oxidation-resistant and extremely thermally resistant
- Good corrosion protection and water-resistance
- Cartridge can be opened without any additional tools, and residues can be cleaned out easily
- Sight glass in cartridge shows remaining paste level

Liebherr Spezial-Schraubenpaste

Special screw paste



Application*



- Operating temperature:
-40°C to +100°C,
- For high-strength friction grip screw connections
- On the basis of a bio-degradable synthetic oil with a temperature-stable solid lubricant combination
- Solid lubricants do not react with the screw material
- Supplies constant and reproducible friction, to achieve the required friction grip in the screw connection
- Do not use Liebherr Spezial-Schraubenpaste instead of grease and never mix it with other lubricants!
- Use only for the applications indicated by Liebherr!
Pastes have an especially high portion of solids which may cause damage if used incorrectly!

Liebherr Gear PG 150

Viscosity ISO VG 150



Application*



- Fully synthetic high-performance transmission oil on the basis of polyglycols
- Especially suitable for heavy-duty components (observe manufacturer's instructions!)
- Good ageing stability and specific additivation may extend oil change intervals
- Note: Liebherr Gear PG 150 cannot be mixed with mineral oils or synthetic oils

Liebherr Gear PG 220

Viscosity ISO VG 220



Application*



- Fully synthetic high-performance transmission oil on the basis of polyglycols
- Especially suitable for heavy-duty components (observe manufacturer's instructions!)
- Good ageing stability and specific additivation may extend oil change intervals
- Note: Liebherr Gear PG 220 cannot be mixed with mineral oils or synthetic oils

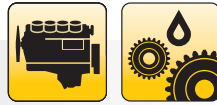
* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.



Special lubricants

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Liebherr Gear Multi HDC-B



Application*



- Operating temperature:
-15°C to +50°C outside temperature
-5°C to +50°C outside temperature for truck mixer transmissions in connection with Rexroth
- Special transmission oil for Liebherr mixing technology machines
- For truck mixer transmissions and separate engines
- Good wear protection
- High safety reserve against deposits in the engine

Liebherr WR-Lube SC



Application*



- Operating temperature:
-40°C to +80°C outside temperature (after the solvent evaporates)
- Rope lubricant for subsequent preservation of wire ropes
- For crane, excavator and industrial ropes
- Excellent corrosion protection
- Excellent adhesive properties and outstanding creep properties

Liebherr Gas Engine Oil 40

Viscosity SAE 40



Application*



- Operating temperature:
0°C to +40°C, outside temperature
- Developed to meet the requirements of modern gas engines
- Suitable for gas engines operated with natural gas or low-emission special gasses
- Excellent neutralisation properties
- Allows long oil change intervals even under difficult operating conditions

* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.

Special lubricants



Liebherr offers special lubricants for special applications such as the lubrication of screws or plug tools and wear bushings in hydraulic and pneumatic hammers, which are designed to exactly meet these requirements.

广州孚润 400-992-6811

Liebherr Fluid X-1

Viscosity VG 15-46



Application*



- High-performance hydraulic fluid especially for use in the Liebherr energy-storing cylinder
- Excellent high and low temperature behaviour
- Optimized filterability and cleanliness
- Low air absorption, good air release properties, low foaming
- Good compatibility with elastomers and hoses
- Supports the efficiency of the Liebherr energy recovery system

Liebherr Syntogear Plus

Viscosity ISO VG 150/220/320/460



Application*



- Fully synthetic high-performance transmission oil on the basis of polyalphaolefines (PAO)
- Especially suitable for heavy-duty components (Observe manufacturer's instructions!)
- Good ageing stability and specific additivation may prolong oil change intervals

Liebherr Spezialfett 9610 Plus

Labelling KP 2 K -20 Special Grease 9610 Plus

Application*



- Operating temperature:
-20°C to +120°C, in central lubrication systems to -15°C, short-term permissible temperature peak +140°C
- Can be pumped and fed in central lubrication systems to -15°C
- Can be used for the lubrication of slewing rings, roller bearings, pins, gear rings, axles, screws and many more
- Strong adhesive property, squeeze stable, ageing-resistant and water-resistant
- Highly effective corrosion protection

* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.



Coolants

Liquid-cooled engines need an effective coolant in order to sustain their performance on an ongoing basis. Liebherr Antifreeze was tested to strict standards and, when used in Liebherr machines, meets the highest demands on function, quality, safety and environmental protection.

Liebherr Antifreeze Concentrate

Labelling Liebherr Antifreeze Concentrate

Application*



Liebherr Antifreeze Concentrate must be mixed with water before use. The use of zinc is not recommended. Can be used all-year round. Please observe the manufacturer's instructions.

Antifreeze protection after mixing:

- To -37°C with 50% water and 50% Liebherr Antifreeze Concentrate
- To -50°C with 40% water and 60% Liebherr Antifreeze Concentrate
- Do not use more than 60% of the Liebherr Antifreeze Concentrate
- Silicate-containing coolant: Ideal protection for Diesel engines from Liebherr, John Deere or Deutz and their components. Suitable for construction machines and commercial vehicles*
- Coolant, free from nitrite, amine and phosphate
- Effectively prevents corrosion and deposits in the cooling system
- Protection from cavitation and erosion damage

Liebherr Antifreeze Mix

Labelling Liebherr Antifreeze Mix

Application*



Liebherr Antifreeze Mix is a ready-to-use mix with an optimum, defined water quality. The use of zinc is not recommended. Please observe the manufacturer's instructions.

- Antifreeze protection to -37°C
- Silicate-containing coolant: Ideal protection for Diesel engines from Liebherr, John Deere or Deutz and their components. Suitable for construction machines and commercial vehicles*
- Coolant, free from nitrite, amine and phosphate
- Effectively prevents corrosion and deposits in the cooling system
- Protection from cavitation and erosion damage

DCA-haltige Kühlmittel

DCA-containing coolants are available on request, either as a concentrate or ready-to-use mix.

Product description:

- Nitrite-containing coolant on ethylene glycol basis for Liebherr Diesel engines type 924/D926, 9406, 9408 as well as a number of Cummins and John Deere engines
- Effectively prevents corrosion and deposits in the cooling system
- Protection from cavitation and erosion damage

* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.

Coolants



Liquid-cooled engines need an effective coolant in order to sustain their performance on an ongoing basis. Liebherr Antifreeze was tested to strict standards and, when used in Liebherr machines, meets the highest demands on function, quality, safety and environmental protection.

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Liebherr Antifreeze Organic SF Mix

Labelling Liebherr Antifreeze Organic SF Mix

Application*



Liebherr Antifreeze Organic SF mix is a ready-to use mix with an optimum, defined water quality. Its use in combination with zinc is not recommended.

Please observe the manufacturer's instructions.

- Antifreeze protection to -37°C
- Silicate-free long life coolant: Ideal protection for Diesel engines from Liebherr and their components. Suitable for construction machines and commercial vehicles*
- Coolant free from nitrite, amine, phosphate and silicate
- Effectively prevents corrosion and deposits in the cooling system
- Protection from cavitation and erosion damage

Liebherr Antifreeze Organic SF Concent

Labelling Liebherr Antifreeze Organic SF Concent

Application*



Liebherr Antifreeze Organic SF Concent must be mixed with water before use. Its use in combination with zinc is not recommended. Can be used all-year round. Please observe the manufacturer's instructions.

- Antifreeze protection after mixing:
- To -37°C with 50% water and 50% Liebherr Antifreeze Organic SF Concent
- To -50°C with 40% water and 60% Liebherr Antifreeze Organic SF Concent
- Do not use more than 60% of the Liebherr Antifreeze Organic SF Concent
- Silicate-free long life coolant: Ideal protection for Diesel engines from Liebherr and their components. Suitable for construction machines and commercial vehicles*.
- Coolant free from nitrite, amine, phosphate and silicate
- Effectively prevents corrosion and deposits in the cooling system
- Protection from cavitation and erosion damage

Legend:

	Tower Crane		Mobile crane
	Articulated Truck		Offshore crane
	Truck mixer		Crawler tractor
	Mobile harbour crane		Wheel loader
	Duty-cycle crawler crane		Crawler excavator
	Crawler loader		Crawler crane
	Wheeled excavator		Telescopic handler
	Mobile construction crane		

* Please always make sure to observe the operating instructions of the machine or the specific work attachments when selecting a lubricant.



Environmental protection

Use of environmentally friendly hydraulic oils

Bio-degradable hydraulic fluids are an environmentally friendly alternative to conventional hydraulic oils on mineral basis and are especially eligible in environmentally sensitive areas such as water protection areas.

Liebherr machines come either filled with environmentally friendly hydraulic oils ex works or may be changed over subsequently.

When selecting the suitable environmentally friendly oil, ecological aspects as well as technical aspects should be taken into account. Hydrolysis and oxidation stability, elastomer compatibility, temperature behaviour and other properties of the oils used will influence the useful life of the oil filling and of the machine components. This means: The entire product life cycle from production through use and disposal must be taken into consideration when looking at environmental compatibility.

With the Liebherr Hydraulic Plus and the Liebherr Hydraulic Plus Arctic, Liebherr offers two environmentally friendly hydraulic oils on the basis of polyalphaolefines (PAO). They are bio-degradable (Biodegradation (21 days, so-called primary degradation*) according to CEC-L-103-12 $\geq 60\%$) and have excellent low-friction properties which reduce fuel consumption. If the oil is well cared for and monitored, the oil change intervals may be extended significantly. Compatibility with elastomers and hoses as well as hydrolysis stability is similar to those of conventional mineral oils.

Your Liebherr Service partner will be pleased to assist you if you have further questions regarding the use of environmentally friendly hydraulic oils.

Storage and disposal

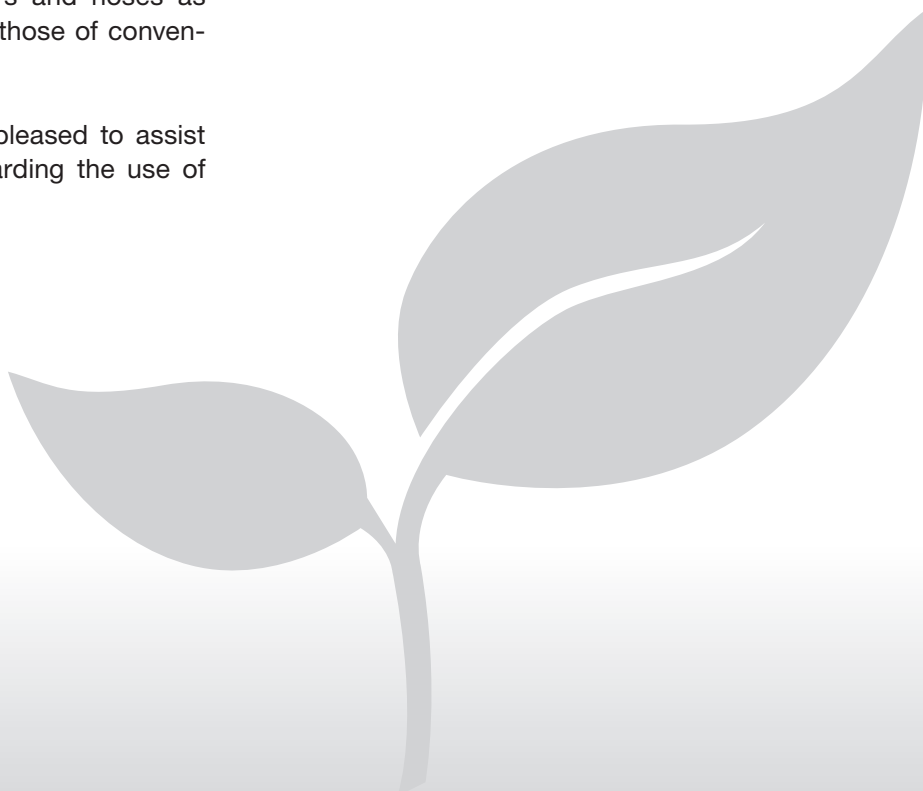
Correct storage of lubricants

To protect your lubricants from weather and contamination store them in confined spaces. Temperature fluctuations will cause the volume of the lubricants to change, thus possibly allowing humidity to enter even closed containers, affecting the quality of the oil.

Disposal of used oils and containers

Lubricants, and even environmentally friendly hydraulic oils, must not enter the sewage system, the soil or waters. Please take precautionary measures. The use of environmentally friendly hydraulic oils does not exempt the user of his obligation to notify the authorities of a contamination of the environment, and to remove spilled oil from waters or the contaminated soil. Hydraulic oil must never be allowed to drain into the soil during an oil change.

All applicable legal regulations must be observed during waste disposal and recycling of used materials such as oils, lubricants and coolants, fuels, filters, oil cartridges or containers. Therefore, please contribute to the protection of our environment and have only certified companies dispose of your waste.



* The test method considers directly the disappearance of the oil up to the degradation level of water solubility.

Ordering information

广州孚润 400-992-6811

Oils

	5 l Jerrycan	20 l Jerrycan	210 l Drum	1.000 l Container
Liebherr Motoroil 10W-40	10 29 05 06	10 33 02 39	10 33 02 46	10 28 62 79
Liebherr Motoroil 10W-40 low ash	10 32 61 13	10 32 61 12	10 32 61 11	10 32 61 10
Liebherr Motoroil 5W-30	10 42 57 12	10 42 57 13	10 42 57 15	10 42 57 19
Liebherr Motoroil 5W-30 low ash	11 06 60 29	11 06 60 30	11 06 60 31*	11 06 60 32**
Liebherr Hydraulic Basic 68	10 33 02 55	10 33 02 58	10 33 02 59	10 33 02 60
Liebherr Hydraulic Basic 100	10 34 40 24	10 34 40 25	10 34 40 26	10 34 40 27
Liebherr Hydraulic HVI	10 33 02 66	10 33 02 68	10 33 02 70	10 33 02 71
Liebherr Hydraulic Plus	10 29 64 80	10 33 02 72	10 33 02 76	10 29 64 81
Liebherr Hydraulic Plus Arctic	10 29 64 79	10 33 02 77	10 33 02 78	10 29 64 78
Liebherr Hydraulic 37	10 66 48 65	10 66 48 67	10 66 47 12	10 66 48 56
Liebherr Hydraulic FFE 30	10 66 48 70	10 66 48 71	10 66 48 72	10 66 48 73
Liebherr Hydraulic-Gear ATF	10 33 02 80	10 33 02 82	10 33 02 83	10 29 64 82
Liebherr Syntogear Plus 75W-90	10 33 02 85	10 33 02 87	10 33 02 88	10 29 64 77
Liebherr Gear Plus 20W-40	10 28 56 40	10 33 02 94	11 21 13 89	11 21 13 88
Liebherr Gear Basic 90LS	10 33 02 95	10 33 02 96	10 28 57 02	10 28 62 80
Liebherr Gear Hypoid 90EP	10 66 48 74	10 66 48 75	10 66 48 76	10 44 16 36
Liebherr Hypoid 85W-140EP	10 28 56 39	10 33 02 91	10 30 16 80	10 33 02 92

Greases

	400 g Cartridge	400 g LubeShuttle Cartridge	4 x 400 g Cartridges	24 x 400 g LubeShuttle Cartridges	24 x 400 g Cartridges
Liebherr Universalfett 9900	10 29 68 16	10 66 47 21	10 42 50 86	11 10 08 90	10 29 68 15
Liebherr Universalfett Arctic	10 29 68 28	–	–	–	10 29 68 27
Liebherr Teleskopfett 9613 Plus	86 13 05 508	–	–	–	10 29 68 20
	10 kg Bucket	25 kg Bucket	50 kg Bucket	180 kg Drum	
Liebherr Universalfett 9900	10 29 68 13	10 29 68 12	10 29 68 11	10 29 68 10	
Liebherr Universalfett Arctic	10 29 68 25	10 29 68 24	10 29 68 23	10 29 68 22	
Liebherr Teleskopfett 9613 Plus	10 33 03 14	10 33 03 15	10 33 03 16	–	

* Quantity 209 l
** Quantity 1045 l

Ordering information

Special lubricants

	500 g Cartridge	20 x 500 g Cartridges		1 kg Can	
Liebherr Meißelpaste	86 10 230	10 33 03 06		–	
Liebherr Spezial-Schraubenpaste	–	–		10 17 13 36	
	5 l Jerrycan	20 l Jerrycan	174 l Drum	870 l Container	
Liebherr Gear PG 150	11 00 08 72	11 00 08 73	11 00 08 74	11 00 08 75	
	5 l Jerrycan	20 l Jerrycan	210 l Drum	1.000 l Container	
Liebherr Gear PG 220	11 00 08 67	11 00 08 69	11 00 08 70	11 00 08 71	
Liebherr Gas Engine Oil 40	11 10 07 83	11 10 02 05	11 10 02 06	11 10 02 07	
Liebherr Syntogear Plus 150	11 11 31 79	11 11 31 80	11 11 31 81	11 11 31 82	
Liebherr Syntogear Plus 220	10 19 03 87	10 19 03 88	10 19 03 89	10 19 03 90	
Liebherr Syntogear Plus 320	10 19 03 91	10 19 03 92	10 19 03 93	10 19 03 94	
Liebherr Syntogear Plus 460	10 19 03 95	10 19 03 96	10 19 03 97	10 19 03 98	
Liebherr Gear Multi HDC-B	10 81 78 92	10 81 78 93	10 81 78 94	10 81 78 95	
	(600ml)	(12 x 600ml)	(25kg)		
Liebherr WR Lube SC	10 17 33 71	10 17 42 61	10 17 42 62		
	950 g Hose bag	10 x 950 g Hose bag		5 kg Bucket	
Liebherr Sprühpaste	10 33 03 08	10 33 03 10		10 33 03 11	
	1 l Can				
Liebherr Fluid X-1	11320316				
	400 g Cartridge	10 kg Bucket	25 kg Bucket	50 kg Bucket	180 kg Drum
Liebherr Spezialfett 9610 Plus	86 13 02 908	86 13 01 308	86 13 04 508	86 13 05 308	86 13 05 108

Coolants

	5 l Jerrycan	20 l Jerrycan	210 l Drum	1.000 l Container
Liebherr Antifreeze Concentrate	10 30 12 15	10 42 84 10	10 42 84 11	10 35 68 33
Liebherr Antifreeze Mix	10 65 18 38	10 30 12 13	10 45 54 46	10 35 90 77
Liebherr Antifreeze Organic SF Concent	11 48 22 93	11 48 22 94	11 48 22 95	11 48 22 96
Liebherr Antifreeze Organic SF Mix	11 48 22 98	11 48 22 99	11 48 23 00	11 48 23 01
	473 ml Bottle		20 l Jerrycan	
DCA Concentrate	73 63 898		–	
Anti-freeze Ready mix with DCA	–		10 00 53 47	

Note: Please observe manufacturer's instructions and oiling regulations. For orders and additional information please contact your Liebherr Service Partner. All information is provided to the best of our knowledge, but without any guarantee. We reserve the right to change data because of innovations or product changes.

The Liebherr Group of Companies



Wide Product Range

The Liebherr Group is one of the largest construction equipment manufacturers in the world. Liebherr's high-value products and services enjoy a high reputation in many other fields. The wide range includes domestic appliances, aerospace and transportation systems, machine tools and maritime cranes.

Exceptional Customer Benefit

Every product line provides a complete range of models in many different versions. With both their technical excellence and acknowledged quality, Liebherr products offer a maximum of customer benefits in practical application.

State-of-the-art Technology

To provide consistent, top quality products, Liebherr attaches great importance to each product area, its components and core technologies. Important modules and components are developed and manufactured in-house, for instance the entire drive and control technology for construction equipment.

Worldwide and Independent

Hans Liebherr founded the Liebherr family company in 1949. Since that time, the enterprise has steadily grown to a group of more than 130 companies with over 38,000 employees located on all continents. The corporate headquarters of the Group is Liebherr-International AG in Bulle, Switzerland. The Liebherr family is the sole owner of the company.

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